



DW-8J

**MEMORANDUM**

DATE:

SUBJECT: RCRA Used Oil - Evaluation of 3007 Response  
Sybill, doing business as SRS Environmental, Inc.  
MIR 000 022 400

FROM: Sue Rodenbeck Brauer, RCRA Used Oil Expert

THROUGH: Karl Bremer, Chief  
Waste Management Branch, WPTD

TO: Joseph M. Boyle, Chief  
Enforcement and Compliance Assurance Branch, WPTD

This memorandum summarizes the technical review of Sybill's response, dated May 7, 2001, to a RCRA Section 3007 information request. Each numbered item below corresponds to the numbered request issued by U.S. EPA in a letter dated March 19, 2001.

**1.****Overview**

U.S. EPA requested Sybill to provide the analyses for a shipment of used oil fuel claimed to be on-specification for a shipment (of used oil fuel to Edwards Oil Service) prior to Michigan's authorization for 40 CFR Part 279. The federally authorized State regulation corresponds to 40 CFR 266.43 (1986-1992). Total halogens are reported over 1,000 ppm, so U.S. EPA presumes that the used oil has been mixed with a listed, halogenated hazardous waste (40 CFR 266.40(c)). Analysis for TCLP metals was requested by Sybill and reported to Sybill instead of total metals analysis [See Attachment 1 to Sybill's response for the RTI Laboratories, Inc. "Report of Analytical Services" dated March 8, 1999 (7 pages) and the analyses requested (a separate RTI Laboratories form in Attachment 1)]. For fuels, total metals analysis is appropriate because metals are not destroyed through combustion and are emitted at estimated rates averaging 31 to 75% (50 FR 49180, 11/29/85). TCLP regulatory thresholds apply to used oil only when it is destined for disposal [40 CFR 279.10(a) and 40 CFR 279.80 - 279.81(a)] or in instances of mixture with hazardous waste [40 CFR 279.10(b)(2)]. Attachment 2 summarizes the regulatory background for analysis of metals and total halogens in used oil fuel.

### **Rebuttal of EPA's presumption of mixture for one shipment to Edwards Oil Service**

In order to rebut U.S. EPA's presumption of mixture, Sybill presented its waste screening results, including chlorine, for all manifested shipments and the associated "Generator Waste Characterization Report." I organized the data submitted by generator in Attachment A and summarized it below. I also researched test methods that I did not recognize as similar to U.S. EPA SW-846 test methods for used oil. I summarized U.S. EPA's regulatory statements regarding analytical methods and used oil in Attachment B.

In summary, out of thirteen generators, only three (GM MFD Grand Blanc, GM Powertrain Livonia, and GM MFD Grand Rapids) had adequate waste characterization information with respect to halogens. Two (Lansing and YPSI) out of the thirteen had questionable waste characterization information. Eight out of the thirteen had waste characterization information inconsistent with the shipments received. As a result, Sybill cannot fully rebut the used oil presumption of mixture with a halogenated hazardous waste for the shipment sent to Edwards Oil. Also, Sybill's demonstration that the used oil fuel met the specification for metals is questionable because the TCLP was conducted instead of analysis for total metals. However, Sybill did demonstrate that it maintains records of analyses corresponding to outbound shipments in compliance with 279.74 Tracking (prior to June 1, 1999, part of Michigan's authorized equivalent to 40 CFR 266.43(b)(1); see February 8, 1996 Federal Register for authorization).

### **Conclusions**

The U.S. EPA may allege that Sybill's determination of metal concentrations in used oil fuel is inadequate because a leaching procedure was used instead of total analysis, but we would have a very weak case since SW-846 is only guidance and since we do not have our own total metals analyses to compare with Sybill's results. With respect to the total halogens and the U.S. EPA's presumption of mixture, Sybill did not present rebuttals for each generator's used oil wastestream prior to processing at Sybill. Sybill cannot rebut the presumption of mixture, based on the records submitted as its information request response. As the blended fuel shipped to Edwards Oil Service contained total halogens below the specification level of 4,000 ppm, this violation poses a threat to the regulatory program and not necessarily to the environment.

### **Recommendations**

I recommend that the U.S. EPA allege Sybill failed to comply with the hazardous waste BIF rules for management prior to burning found at 40 CFR 266.101 Management prior to burning. Sybill is not complying with the management standards for hazardous waste treatment, storage, and disposal facilities referenced in 40 CFR 266.101. I recommend a moderate extent of deviation because Sybill presented information to rebut the presumption for some wastestreams blended into the shipment. I recommend moderate-minor potential for harm because the total halogen level in the used oil shipped was below 4,000 ppm (harm to HHE) and because managing hazardous waste as used oil fuel is very damaging to the RCRA regulatory program.

2.

U.S. EPA asked Sybill a) to describe the waste characterization process during the period from

June 1, 1999 to March 27, 2000; b) to explain why BS&W was not reported for the listed used oil generators. The period requested begins with Michigan's authorization for the 1992 RCRA used oil management standards and ends with the date of the inspection. Sue Brauer suspected that if Sybill had not conducted BS&W, then other analyses may not have been completed, either. The purpose of the request was to determine compliance with 40 CFR 279.55; specifically, was Sybill following its plan to comply with 40 CFR 279.53 and 279.72?

In response, Sybill presented pages 26 (5-1) to 30 and 49 to 49(i) of Revision 1.40 of the QA/QC Program (without an effective date for these excerpted pages in the response). These pages incorporate Sue Brauer's draft guidance on the RCRA used oil rebuttable presumption. The pages submitted did not exist during the period of inquiry because Sue Brauer provided the draft guidance to Sybill during the multi-media inspection in March 2000.

In conducting the intended 3007 response review, Sue Brauer relied upon the "SRS Environmental QA/QC Program" document provided on March 27, which was verbally claimed as CBI and which is Revision 1.3 dated November 3, 1999. A plan for the period from June 1, 1999 to November 3, 1999 was not identified or supplied. According to the plan (Revision 1.3), "Inbound materials are subjected to the approval process on an annual basis. Full-scale analysis required in Figure 5-C is also necessary when:

- a generator begins a new process or changes an existing process
- In bound materials are received for the first time
- Regulatory changes identification/classification rules"

(page 5-2, Revision 1.3, November 3, 1999). Unfortunately, total halogens were not required by Sybill's plan during the period covered by the request (to the extent it can be determined). According to Sybill's plan, "This baseline data will be compared to future shipments of inbound material" (page 5-5, Revision 1.3, November 3, 1999). Also according to Sybill's plan, "Figure 5.G indicates the parameters performed on each shipment at SRS Environmental to confirm accurate identification of the inbound material" (page 5-8, Revision 1.3, November 3, 1999). Figure 5.G is titled, "SRS Environmental Fingerprint Analysis Used to Sample Inbound Material" and identifies '% Chlorine' under the "Chemical Parameters" heading. No analytical method for % chlorine is identified in the portions of Sybill's analysis plan applicable to incoming wastes. So, in order to comply with its plan, Sybill should have compared a) % chlorine results for each incoming shipment to b) % chlorine results in the annual waste profile.

In its response, Sybill provided work orders and Generator Waste Characterization Reports, generator analytical data, and Sybill-generated data. The data on those documents is summarized in Attachment C.

### **Conclusions**

Number of shipments or days of shipments from Nelson Metal Products without %chlorine for both waste profile and incoming shipment is # of shipments violating requirement to implement the plan.

### **Recommendations**

### **Attachment C - Review of Sybill's Response to Request 2**

For Nelson Metal Products, the line following "Halogens: Less than 1000 ppm" is blank on Generator Waste Characterization Reports for 1998, 1999, and 2000. While the waste common name is "waste water," the form dated 12/02/2000 includes additional information. The line after "DOT Shipping Name" is completed with "Water & Soluble Quench Oil." The line after "USEPA Hazardous Waste Code" is completed with a Michigan waste code, "019LN." The State of Michigan regulates "Coolants and Water Soluble Oils" under Part 121 with the waste code "019L." This additional information confirms that this waste stream is a "used oil" as defined by RCRA regulations. Sybill did not provide any analytical determination of total halogens by the generator. In February 2000, SRS started doing Cl (sampled 1/8/2000 and analyzed 1/27/2000, sampled 2/3/2000 and analyzed 2/8/200, sampled 2/4/2000 and analyzed 2/8/2000, all less than 1,000 ppm) and PCBs. The SRS lab sheets don't specify a method for Cl.

For DOT Detroit at 1301 E. Warren, the line following "Halogens: Less than 1000 ppm" is checked on Generator Waste Characterization Reports for 1999 and 2000. The "Waste Common Name" is "Waste Oil." Sybill provided a copy of an analytical results summary sheet (dated March 8, 1996) attached to correspondence from ACIS Environmental Laboratories; listing Total Halogens with a concentration of 500 PPM. No analytical method for the determination is provided. PCBs are reported as less than the reported detection limits for seven Arochlor mixtures; this sums to a total PCB concentration of less than 4.5 ppm. No SRS analytical results was provided.

For DOT at 1301 E. Warren, the line following "Halogens: Less than 1000 ppm" is completed with "<300 ppm" on the Generator Waste Characterization Reports for 2000 and with "<380" on the Generator Waste Characterization Report for 1999. The "Waste Common Name" is "waste water/oil." Sybill provided a copy of the laboratory analysis summary (dated June 26, 1996); "Parts Wash Pit" is handwritten on the transmittal letter. Total Halogens are listed with a concentration of 380 ppm; no analytical method is reported. PCBs are reported as less than the reported detection limits for seven Arochlor mixtures; this sums to a total PCB concentration of less than 4.5 ppm. No SRS analytical results were presented.

For DOT at 5600 Wabash, the line following "Halogens: Less than 1000 ppm" is blank on the Generator Waste Characterization Report for 2000. The "Waste Common Name" is "Waste Water/Oil." Sybill attached a summary of laboratory analysis from ACIS Environmental Laboratories dated January 10, 1996. Total halogens are not listed. 2,4,5-Trichlorophenol is reported at 200 (mg/l, presumably); chlorobenzene, chloroform, and pentachlorophenol were each reported at 50 (mg/l, presumably). Additional halogenated constituents were detected below TCLP regulatory thresholds. PCBs are reported as less than the reported detection limits for seven Arochlor mixtures; this sums to a total PCB concentration of less than 4.5 ppm. No SRS analytical presented.

For DOT Detroit at 5149 St. Jean, the line following "Halogens: Less than 1000 ppm" is blank on the Generator Waste Characterization Report for 2000 and is completed with "<400" for 1999. The "Waste Common Name" is "waste oil water." Sybill provided a copy of the laboratory analysis summary, from ACIS Environmental Laboratories, dated January 18, 1996. The cover

letter for the laboratory report identifies the sample as "oil/water/sludge/drain waste." Total halogens are reported as 350 ppm; no analytical method is identified. Individual halogenated TCLP constituents were detected below the regulatory threshold concentrations. PCBs are reported at and below MDL [method detection limits]; reported concentrations of Arochlor mixtures sum to 3.5 [units not specified]. A second laboratory report from ACIS Environmental Laboratories is dated January 5, 1996 for a sample of "oil/water/sludge/drain waste." Total halogens are reported at a concentration of 400 ppm; the analytical method is not identified. Again, halogenated TCLP constituents are reported above detection limits but below the TCLP regulatory threshold. For example, 2,4,5-trichlorophenol is reported at 200 (presumably mg/l). PCBs are reported as less than the reported detection limits for seven Arochlor mixtures; this sums to a total PCB concentration of less than 4.5 ppm. The PCB method is not provided, unless TCLP was modified to include Arochlors as target analytes.

For DOT Detroit at 14044 Schaefer, the line following "Halogens: Less than 1000 ppm" is blank on the Generator Waste Characterization Report for 2000 and is completed with "300 ppm" for 1999. The "Waste Common Name" is "waste water & oil." Sybill provided a laboratory report from ACIS Environmental Laboratories without the transmittal letter. The sample date is January 8, 1996. Total halogens are reported as 300 ppm without identification of the analytical method. Individual halogenated TCLP constituents are detected at concentrations below the TCLP regulatory threshold (e.g., 2,4,5-trichlorophenol at 200, M-O- and P-Cresols all at 100). PCBs are reported as less than the detection limits for seven Arochlor mixtures; this sums to a total PCB concentration of less than 4.5 ppm. The PCB method is not provided, unless TCLP was modified to include Arochlors as target analytes. Sybill also provided four copies of completed "Data Summary Sheet[s]" for DOT. For SRS sample number 7698421; the date sampled is January 29, 2000 and the date analyzed is February 1, 2000; Cl is reported as 2264 ppm. For SRS sample number 7698420; the date sampled is January 22, 2000; the date analyzed is January 25, 2000; Cl is reported as 1108. Cl was reported below 1000 ppm for the other two samples. Sybill reported detection limits for Aroclor mixtures 1248, 1060, 1260, 1254, and 1242 as 5.0 ppm; the total PCB detection limit is a sum of 25 ppm.

For Alpha Stamping, the line following "Halogens: Less than 1000 ppm" is blank on the Generator Waste Characterization Report for 1999 and 1998. The "Waste Common Name" is "coolant/water." Sybill provided a laboratory analytical report from Summit Environmental Technologies, Inc. dated October 23, 1997 that reports total halogens at a concentration of 287.6 mg/kg by ASTM D808. Sybill provided its DATA SUMMARY SHEET for SRS Sample Number 7698448, sampled February 1, 2000, analyzed February 2, 2000 and Cl reported as 348.

For Oscar W. Larson Com, the line following "Halogens: Less than 1000 ppm" is completed with a check on the Generator Waste Characterization Report for 1998. The "Waste Common Name" is "used oil." The "USEPA Hazardous Waste Code" is 017L; under Michigan's Part 121 rule, waste number 017L is assigned to Crankcase Oil. Sybill provided laboratory data from Summit Environmental Technologies, Inc. dated November 19, 1997; this did not include a total halogen determination, only TCLP metals. Sybill provided laboratory data from Midwest Analytical Services, Inc. with a completion date of January 15, 1997; this included only PCB results ("N/D") with estimated quantification limits of 1.0 mg/kg for each Arochlor mixture. Sybill provided

an undated analytical report from Environmental Waste Control, Inc. showing chlorine at 0.0702%; no analytical method was specified. The latter report provided samples results of "N/D" for PCB analyses using SW-846, Method 8080A.

For GMC - GM Powertrain Group - Liv., the line following "Halogens: Less than 1000 ppm" is completed with "460 ppm" on the Generator Waste Characterization Report for 2000. The line following "Halogens: Less than 1000 ppm" is completed with "460 ppm" on the Generator Waste Characterization Report for 1999. The "Waste Common Name" is "Waste Oil" with processes generating waste including "coolants, washer, oil, and rain water." The "USEPA Hazardous Waste Code" is 021L; under Michigan's Part 121 rules, code 021L is assigned to "Other Oil (Describe in item 11 or Item J [on the DEQ's Uniform Hazardous Waste Manifest])." The "DOT Shipping Name" is waste scum oil. Sybill provided an analytical laboratory report dated April 3, 1998 from Fire & Environmental Consulting Laboratories, Inc. Halogens are reported with a concentration of 460 mg/kg determined by method ASTM 2015 (page 2 of 6). Sybill provided its own Data Summary Sheets. For SRS Sample Number 4870874, sampled February 10, 2000 and analyzed February 29, 2000, Cl was 1467. For SRS Sample Number 4370872, sampled February 4, 2000 and analyzed February 9, 2000, Cl was reported as 228. For SRS Sample Number 7409377, sampled January 18, 2000 and analyzed January 24, 2000, Cl was 856. The other two Data Summary Sheets were for samples outside the time period of inquiry.

For GMC Lansing (LAD), the line following "Halogens: Less than 1000 ppm" is completed with "x" on the Generator Waste Characterization Report for 2000 (signed 8/8/2000) and is completed with an "x" on the Report signed June 16, 1998. The "Waste Common Name" is "6-OILSWTSRS." The "DOT Shipping Name" is "Non Hazardous Waste (used oil)." Sybill provided an Analytical Laboratory Report dated March 14, 2000 prepared by Fire & Environmental Consulting Laboratories, Inc.; halogens were not detected using ASTM D2015. Sybill provided an Analytical Laboratory Report dated April 1, 1997 prepared by Fire & Environmental Consulting Laboratories, Inc.; halogens are reported as <100 by ASTM D2015. Sybill provided its own Data Summary Sheets. For SRS sample number 7616122, sampled January 18, 2000 and analyzed January 24, 2000, Cl was 851. For SRS sample number 7610218, sampled February 3, 2000 and analyzed February 8, 2000, Cl was 84. For SRS sample number 7609814, sampled February 11, 2000 and analyzed February 17, 2000, Cl was reported as 1561. For SRS sample number 2610181, sampled February 16, 2000 and analyzed February 23, 2000, Cl was reported as 1013. For SRS sample number 7610237, sampled February 23, 2000 and analyzed March 1, 2000, Cl was reported as 926.

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3. Response seems okay, unless they slipped up and missed a generator. Will be easy to check once rest of review completed.

4. Information provided omits review of hazardous waste codes also generated by used oil generator. This is inconsistent with the QA/QC plan, which incorporates the draft guidance

recommended protocol.

5. So they ship only from Tank 4? Why are they doing SW-846 Method 9020, "Total Organic Halides"? I suspect that this method was developed for LDR California List wastes . . . Need to check on this. Also, the same method is listed for "chlorine volatile" and "chlorine total" differing analytical results (e.g., <100 ppm and <3300 ppm).

6. Thank you for enclosing photo of Tank 29. A photo of this tank was not included in the April 14, 2000, letter. It was part of the September 2000 response.

7. This says they are using ASTM D4294 for (incoming?) halogen determination (SW-846 9020 only for out-bound fuel???)

8. Preliminary review indicates this is okay.

**Attachment A - Response 1.**

Review of total halogen determinations by generator and screening of individual incoming loads by Sybill prior to shipment of uof to Edwards Oil Service. Information provided in Sybill's response is summarized in the table below. Comments on the information follow the table.

Generator Name	Generator EPA ID	Sybill Screening			Generator Characterization		
		manifest	date	chlorine results	total halogens	method	date
YPSI	MID 980 587 893		07142000	1878 ppm	700 ug/g >1,000 PPM >1,000 PPM	SW-846 9253 "on file" "on file"	02012001 05172000 08151999
			04012000	920 ppm			
			03102000	1163 ppm			
			02112000	1062 ppm			
			02042000	640 ppm			
			02032000	728 ppm			
		7448595	02241999	2427			
		7448596	02241999	2421			
		7448597	02241999	2378			
		7448593	02231999	1779			
		7448594	02231999	1872			
		7448591	02221999	2052			
		7448590	01291999	2370			
		7448588	02181999	1572			
		7448589	02181999	2499			
		7448585	02171999	1725			
		7448586	02171999	2147			
		7448587	02171999	-100			
		7448582	02161999	1898			
		7448583	02161999	2051			
		7448584	02161999	2081			
		7448580	multiple	1857			
		7448581	multiple	1862			
		7448578	02121999	2035			
		7448579	02121999	2228			
		7448576	02111999	1773			
		7448577	02111999	2104			
		7448573	02101999	1989			
		7448579	02101999	1935			
		7448575	02101999	1741			
		7448571	02091999	2145			
		7448572	02091999	2163			
		7448570	02081999	2223			
		7448568	02051999	2473			
		7448569	02051999	2135			
		7448567	02041999	2600			

7448565	02031999	3344
7448566	02031999	2386
7448562	02021999	2126
7448561	02011999	2841
7448551	01291999	2680
7448560	01291999	2002
7448559	01281999	2450
7448585	01281999	2262

blank

N/A

-19-98

Toledo	OHD 005 041 371	7113593	0224199902	3996	see below	see below	
		7113567	241999	1256			
		7113592	02231999	4283			
		7113565	02231999	1230			
		7113588	02222999	5840			
		7113589	02222999	4952			
		7113591	02222999	5725			
		7113587	02191999	4907			
		7113585	02181999	6462			
		7113586	02181999	5963			
		7113584	02171999	6972			
		7113583	02161999	5119			
		7113581	mid Feb	4727			
		7113582	mid Feb	4060			
		7113580	02121999	3885			
		7113578	02111999	4123			
		7113579	02111999	3334			
		7113576	02101999	2868			
		7113577	02101999	2869			
		7113575	02091999	3890			
		7113573	02081999	4067			
		7113574	02081999	4427			
		7113572	02051999	4324			
		7113571	02041999	5834			
		7113570	02031999	4249			
		7113564	02021999	2601			
		7113564	02011999	4680			
		7113565	02011999	3951			
		7113568	02011999	3223			
		7113562	01291999	3418			
		7113563	01291999	3752			
		7113561	01281999	3197			

Lansing	MID-980 700 827				2200	ASTM D2015 8260/5030 8270/3510	02181998 report
					2100	ASTM 2015 8010	03041998 supp.
					1561	Tom King	02172000
					1013	Tom King	02162000
					926	Tom King	02232000
					84	Tom King	02032000
					851	Tom King	01182000
		7609822	0224199902	2563			
		7609821	171999	4814			
		7609820	02091999	1246			
		4403831	02041999	3215			
		7604817	02021999	2794			

Buick	MID 005 356 712	4492297 4492296 4492295 4492293 4492292 4492291 4492289 4492290 4497288 4492286 4492287 4492285 4492284 4492282 4492283 4492281 4492280 4492277 4492278 4492275 4492274	02241999 02231999 02221999 02181999 02171999 02161999 mid Feb mid Feb 02121999 02111999 02111999 02091999 02081999 02051999 02051999 02041999 02041999 02031999 02021999 01291999 01281999	1605 1517 1498 1551 1861 1798 1637 1942 2006 2158 2554 2980 2694 2631 1849 2156 1905 1478 1469 1945 2500	770 ug/g  2190	SW-846 9253 8260, 8015 ? At Sybill	04262000  12062000
Delphi	OHD 001 330 442	7106153 7111478	02191999 mid feb	"Polymer, no oil" 1779	149 mg/kg  TX not det.	D808 1311, 8260, 8270 "knowledge"	02051996  12012000
GM Powertrain (Toledo, Ohio; see "Toledo")	OHD 005 041 371	mixed ferric	oil sludge.	residue	2090 mg/kg TX not det.	No TX method stated, but specific constituents analyzed for priority pollutants with very high D.L.	04261999 04271999

GM Powertrain Saginaw Malleable	MID 005 336 696	7640795	02171999	1651	TX not det.	14 hal.const.	06051998
GM Powertrain Romulus Engine	MID 000 809 905	7111316 7111315 7111322	02221999 02031999 02011999	3213 2948 3017	"Total hazardous halogens"	8021B N.D. 13 hal.haz. const.	05042000
GM MFD Grand Rapids	MID 006 020 408	3046229	02121999	915	860 ug/g	SW-846 9253 (+ TCLP)	09291999
GM Flint V8	MID 005 356 951	4477860 4477859 4477858 4477857 4477856 4477855 4477834 4477853 4477852 4477851 4477850 4477849	02231999 02221999 02181999 02161999 mid-Feb 02111999 02091999 02081999 02041999 02031999 02011999 01281999	2093 3059 2308 1679 1292 1159 2976 1784 1690 1856 1795 1892	840 mg/kg	D4208 (+ TCLP)	02241997

GM PTG Warren	MID 005 356 811	7480094	02231999	1306	500	gen. waste char.	03012001
		7480093	02221999	3645	500 mg/kg	form	09061994
		7640749	02191999	1798		9076	
		7480091	02181999	1521			
		7480090	02171999	1055			
		7480089	02161999	1545			
		7480088	02121999	1637			
		7480087	02111999	2321			
		7480086	02101999	1269			
		7480085	02091999	1510			
		7488084	02081999	718			
		7480083	02051999	1849			
		7480082	02041999	1611			
		7480081	02031999	1005			
		7480080	02021999	1249			
		7480079	02011999	1420			
		7480078	01291999	1125			
		7480077	01281999	2490			
Rouge Steel Company	MID 087 738 481	tandem	mill	waste oil	no TX	gen waste char	11241999
		WWTP	clarifier	"	TCLP 15+pest	form	11241999
		Hilo	Shop		<1000 ppm	gen waste char	11241999
		Skin	Pass2 MW		TCLP 15+pest	form	11241999
		Metal	Coil cut	Slitter	<1000 ppm	gen waste char	11241999
		Recoil	Welder		TCLP 15+pest	form	11241999
		south	metal coil	fin hyd	<1000 ppm	gen waste char	11241999
		HSM	roughing		TCLP 15+pest	form	11241999
		north	mill	hyd and	<1000 ppm	gen waste char	11241999
		HSM	skimmer	bearings	TCLP 15+pest	form	11241999
		primary	tank	WWTP	<1000 ppm	gen waste char	11241999
		brille	lagoon		TCLP 15+pest	form	11241999
		2ndary		WWTP	<1000 ppm	gen waste char	11241999
		7670855			TCLP 15+pest	form	03132001
		7670905			1191	Tom King	03072001
		7670897			1177	Tom King	03012001
		7670805			874	Tom King	02142001
		7670745			1063	Tom King	02212001
		7663156			896	Tom King	01082001
		7575849			1126	Tom King	01042000
		7662788			1004	Tom King	12012000
		7662894	02191999		599	Tom King	11102000
		7080645	02191999	103	898	Tom King	
		7080640	mid Feb	355			
		7617578					

GM Powertrain Livonia	MID 000 718 874				460 460 mg/kg	gen. ASTM 2015 HVO by 8010 TCLP624/625	07202001 06031998 3/1998 3/1998
		4370847 4370846 4370844	02171999 02161999 02111999	322 -1.7896 848	polymer		
GM MFD Grand Blanc	MID 005 356 944				<50 blank 465 <50 ppm	gen gen gen 5050 TCLP 15	03062001 01242000 10271998 10301998 10301998
		4386274	02171999	780?			

#### YPSI

- 11/7/95 letter indicates no approved plant uses of F001, F002 and that die lubes contain halogenated paraffins.
- 8/1998 generator form TX blank
- 37 out of 38 shipments received from 1/28/99 to 2/24/99 over 1,000 ppm TX
- 8/1999 generator form indicates TX over 1000
- 2/7/2001 analytical reports 700 ug/g total halogens along with PCBs (not detected) and TCLP (non-haz)

While this rebuttal leaves something to be desired (such as more recent info than 4 years old to rebut), Sybill may have relied upon the 11/7/95 letter.

#### Toledo

- 32 out of 32 shipments received from 1/28/99 to 2/24/99 exceed 1,000 ppm TX
- April 1999 analytical for "mixed oil residue" includes a total organic halogen concentration of 2090 mg Cl/kg (no method stated) and priority pollutant analyses with very high detection limits, over 100 ppm for halogenated hazardous constituents
- January 25, 2000 memo to SRS bases rebuttal on chlorinated paraffins and April 1999 analytical
- February 2001 Generator Waste Characterization Report indicates TX over 1,000 ppm

No analytical data or generator statement available for rebuttal at time of shipment to Edwards.

#### Lansing

- 2/3/1998 sample contained 2,200 mg/kg TX (method 2015; 2100 mg/kg on another page of same fax), analyzed for volatile

- organics (8260/5030), TCLP organics (8260/5030, 8270/3510), PCB <20! (8080/3510), halogenated volatile organics (8010)-
- 5 out of 5 shipments from 2/2/1999 to 2/24/1999 exceed 1,000 ppm TX and range from 1246 to 4814 ppm TX
- five TX determinations by Tom King for Sybill range from 84 to 1561 from 1/18/2000 to 2/17/2000
- total halogen space on generator waste characterization report dated 2/24/2000 is blank

Supporting analytical is weak due to analytical methods (TCLP) selected. Also, ASTM Method 2015 is "Test Method for Gross Calorific Value of Coal and Coke by the Adiabatic Bomb Calorimeter" in Volume 05.05 of ASTM Standard Methods. I could not obtain a copy of this method in the Region 5 library, but I doubt that it could be modified to obtain total halogen results. *Is there a method 2015 under other applicable regulations that might be relevant? Not in SW-846.*

#### Buick

- A memorandum dated 5/4/98 states that total halogens are present in excess of 1,000 ppm due to chlorinated paraffins in cutting oil and that the used oil has not been mixed with halogenated hazardous waste.
- 21 of 21 shipments from 1/28/99 to 2/24/99 exceed 1,000 ppm total halogens, ranging from 1469 to 2980.
- a 4/26/00 sample was analyzed using SW-846 method 9253 and a result of 770 ug/g total halogens was reported. Methods 8260, 8015, 8270, and 8082 were also applied with no target analytes detected.
- A 12/4/00 sample was analyzed by Sybill and contained 2190 ppm Cl.

Simply to state that chlorinated paraffins are present does not eliminate the possibility of mixture. The 4/26/00 (770 ug/g) sample is considerably lower than total halogens as reported by Sybill for the shipments received by Sybill. Also, it post-dates the shipments by over one year, making it an unacceptable rebuttal.

#### Dephi

- a 2/5/96 sample was determined to contain 149 mg/kg using method D808; halogenated hazardous constituents were not detected using 1311, 8260, and 8270
- two shipments were received from Delphi in 1999 and blended into the fuel sent to Edwards Oil Service, containing 1779 ppm total halogens and undetermined total halogens due to "polymer, no oil"
- a 12/1/2000 letter states that Sandusky Operations (Delphi) does not use any solvent materials that contain F001 or F002 hazardous constituents; a total halogen determination (>1000 ppm) is made based on knowledge that the press lubricant contains chlorinated paraffin additives, 31-35% chlorine by weight.

The shipment blended into fuel (1779 ppm) was not represented by the 2/5/96 sample (149 mg/kg)! It should have been held pending receipt of rebuttal info from Delphi or rejected.

#### GM Powertrain Saginaw Malleable

- a 6/5/98 analysis for the toxicity characteristic reported undetected concentrations for 14 halogenated constituents, but

detection limits for individual halogenated constituents are listed as high as 90 and in one instance 180 mg/L. No total halogen determination analytically or indicated on generator waste characterization form

- one shipment was received at 1651 ppm Cl on 2/17/99

This shipment should have been held pending additional generator information or rejected.

#### GM Powertrain Romulus Engine

- three of three shipments received in 2/11/99 to 2/21/99 exceeded 1000 ppm total halogens, ranging from 2948 to 3213.
- the generator waste characterization form dated 5/11/99 (after receipt of shipment) does not include a total halogen determination
- the generator waste characterization form dated May 2000 indicates total halogens are not less than 1,000 ppm
- Lab report for a 5/4/00 sample reports "total hazardous halogens" determined using 8021B as not detected. GC VOA by 8021B has a reporting detection limit of 250 mg/kg for methylene chloride, GCSVOA by 8082 (for PCBs); none of these target analytes were detected.

There is no information to rebut the presumption of mixture for the shipments blended into used oil fuel shipped to Edwards.

#### GM MFD Grand Rapids

- Sybill recorded a 2/12/99 shipment as containing 915 ppm Cl
- 10/6/99 analytical report includes total halogens determined by SW-846 9253 at 860 ug/g. TCLP also run, all targets reported as not detected with dilution and matrix interferences
- the January 2000 generator waste characterization report identifies total halogens as less than 1000 ppm

No rebuttal needed, as all analytical indicates TX < 1000 ppm

#### GM Flint V8

- total halogens determined as 840 mg/kg with method D4208 for sample taken 2/24/1997
- twelve of twelve shipments received from 1/28/99 to 2/23/99 exceed 1000 ppm TX, ranging from 1159 to 3059 ppm Cl in Sybill's analysis
- March 2001 generator waste characterization report indicates TX less than 1000 ppm

The waste characterization sample does not represent the shipments received and blended into fuel; Sybill should have rejected or held these loads pending additional generator information.

ASTM method D4208 is "Test Method for Total Chlorine in Coal by the Oxygen Bomb Combustion/Ion Selective Electrode Method."

This method does not resemble any of the total chlorine or halogen test methods developed by U.S. EPA for used oil.

#### GM PTG Warren

- sample collected 2/24/97 contained 840 mg/kg total halogens, using method D4208 and did not contain detectable TCLP halogenated constituents
- seventeen of eighteen shipments received from 1/28/99 to 2/23/99 exceeded 1,000 ppm total halogens, ranging from 718 to 3645 ppm
- sample collected 9/5/2000 did not contain detectable TCLP halogenated constituents
- 3/14/01 generator waste characterization report states halogens are less than 1000 ppm

The sample analyzed before receipt of shipments does not represent the shipments received. Sybill should have rejected or held these loads pending additional generator information.

ASTM method D4208 is "Test Method for Total Chlorine in Coal by the Oxygen Bomb Combustion/Ion Selective Electrode Method." This method does not resemble any of the total chlorine or halogen test methods developed by U.S. EPA for used oil.

#### Rouge Steel Company

- Two of three shipments from Rouge received from mid-February to 2/19/99 were below 1000 ppm total halogens; the third did not include a result
- Sybill submitted generator waste characterization reports dated 11/24/99 for eleven waste streams generated by Rouge. Only the tandem mill report did not identify total halogens as less than 1000 ppm (the space for a total halogen concentration was blank for the tandem mill). Notably, none of the submitted analyses included a report of total halogen determination. All supporting analytical consisted of TCLP (15 constituents along with pesticides)
- five of nine Sybill analyses for Rouge from 11/10/00 to 3/13/01 exceeded 1000 ppm total halogens, with results ranging from 599 to 1191 ppm.

Sybill should have rejected loads with TX >1000 ppm or waited for additional information.

#### GM Powertrain Livonia

- three shipments were received and blended into the shipment to Edwards. All data support TX less than 1000 ppm.

#### GM MFD Grand Blanc

- one shipment received and blended into the shipment to Edwards. All data support TX less than 1000 ppm.

#### **Attachment B**

#### Analysis of metals and total halogens in used oil fuel - regulatory background

In the preamble to the final waste-as-fuel rule (November 29, 1985, Federal Register), EPA states, "EPA is aware that digestion procedures specified by SW-846 for sedimentaceous oils prior to metals determinations (i.e., methods 3030 and 3050) do not result in complete digestion and release of metals in some oily matrices. EPA is evaluating revised digestion procedures and anticipates proposing revisions to the procedures in early 1986. In the interim, EPA recommends using digestion method 3050 followed by the determination method appropriate for specific metals (see Table 6). For non-sedimentaceous oils, however, the solvent dissolution procedures of method 3040 may be used in lieu of digestion method 3050" (50 FR 49189). In 1985, the EP Toxicity test was in effect, not the Toxicity Characteristic Leaching Procedure or TCLP. Also, in 1985, the waste-as-fuel rule included hazardous waste fuels (40 CFR 266, Subpart D) and used oil fuel (40 CFR 266, Subpart E).

Also in the preamble to the final waste-as-fuel rule, the U.S. EPA stated that it was verifying the accuracy and precision of two field test kits for total chlorine, an adaptation of the Beilstein flame colorimetric test, and a field test kit using chemical colorimetric procedures. In 1985, the U.S. EPA's test methods manual, SW-846, did not contain an analytical technique for determining total halogens in oil. Until a total halogen technique for oils would be formally added to SW-846 as an approved test, the EPA recommended the broadly accepted ASTM D808- 81 method (i.e., oxygen bomb followed by titrimetric halogen determination) (50 FR 49189).

In the preamble to the Toxicity Characteristic final rule (March 29, 1990 Federal Register), EPA writes:

"Under today's rule, used oil will be regulated as a hazardous waste only: (1) If it exhibits one or more of the hazardous waste characteristics defined in subpart C of 40 CFR part 261 (including the TC as finalized today) and (2) if it is disposed of (rather than recycled). On the other hand, used oil that exhibits one or more of the hazardous waste characteristics and is recycled is exempt from regulation (see 40 CFR 261.6(a)(3)(iii)) except as provided in subpart E of 40 CFR Part 266. . . .

- Characteristically hazardous used oil that is being burned for energy recovery is subject to subpart E of part 266--i.e., off-specification used oil is subject to certain administrative requirements, while specification used oil is subject only to the analysis and recordkeeping requirements of 40 CFR 266.43(b)(1) and (6)" (61 FR 11840-11841).

In summary, the TCLP leaching procedure does not apply to used oil fuel because used oil fuel is not land-disposed and the potential risks posed to human health and the environment considered in promulgating the TCLP are not the risks posed by burning used oil fuel. TCLP results are likely to be lower than total metal analyses, due to the analytical difficulty associated with an oily matrix.

On February 21, 1991, EPA published the final rule for 40 CFR 266, Subpart H--Hazardous Waste Burned in Boilers and Industrial Furnaces (the BIF Rule, 56 FR 7208). On August 27, 1991, EPA published technical corrections to the BIF Rule, including a revision to 40 CFR 266.100(c)(1)(ii) and 266.102(b)(1) to allow the use of methods to characterize the physical or chemical properties of feedstreams other than those prescribed by "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846. The Agency recommended methods for determining chlorine levels in feedstreams:

"Total chlorine may be determined by first combusting the sample according to existing SW-846 methods 9250, 9251, 9252, or proposed SW-846 method 9253. The final gravimetric step in ASTM D808 is not recommended because of poor sensitivity. An option for determining total chlorine in aqueous feedstreams is to analyze according to SW-846 methods 9020 or 9022, and inorganic chloride according to the methods listed above (56 FR 42506). . . . To implement the use of these methods, EPA is revising §§ 266.100(c)(1)(ii) and 266.102(b) to require the owner or operator to use the best available method if SW-846 does not prescribe a method for a particular determination. . . . The Director may reject the use of an alternative method because, at his/her sole discretion, it may not meet or exceed

the performance capabilities of the recommended methods" (56 FR 42507).

No helpful reference was made to the existing analysis requirements for marketers of used oil fuel at 40 CFR 266, Subpart E, presumably because SW-846 methods were not required to be used by regulation. In Subpart E, **40 CFR 266.40 Applicability** states in part, "Used oil containing more than 1000 ppm of total halogens is presumed to be a hazardous waste because it has been mixed with halogenated hazardous waste listed in subpart D of part 261 of this chapter. Persons may rebut this presumption by demonstrating that the used oil does not contain hazardous waste, (for example, by showing that the used oil does not contain significant concentrations of halogenated hazardous constituents listed in Appendix VIII of part 261 of this chapter)." Also, a different Division within the Office of Solid Waste was responsible for preparation of the used oil rules than for the BIF rule; the BIF rule preamble focused on hazardous waste fuel.

On September 23, 1991, the U.S. EPA published a Supplemental Notice of Proposed Rulemaking in the Federal Register, announcing the availability of additional data on the composition of used oil and used oil residuals. The U.S. EPA collected the data for use in making its final decision on whether to list some or all used oils as hazardous waste. Public comment was requested on several aspects of the hazardous waste identification program as related to used oil. In making its decision to list some or all used oils as hazardous waste, total halogen concentrations were not considered; only eight organic constituents were analyzed and reported. Also, the U.S. EPA performed metals analyses using a modified TCLP as the basis for the listing decision and identified these test methods for inorganics: SW-846 Method 1311 (TCLP) for filtration, SW-846 Method 3040 (kerosene dissolution) and SW-846 Method 3051 (microwave digestion,  $\text{HNO}_3$  only) for sample preparation, and SW-846 Method 6010 (Inductively Coupled Plasma Atomic Emission Spectroscopy) or SW-846 Method 7000 series (Atomic Absorption/graphite furnace). The Agency analyzed used oil filtrate and identified the analytical results as a "lower bounds for the TCLP final analyte and compositional concentrations" (56 FR 48008). While the Agency did not solicit comments on method modification, the Agency noted that several analytical protocols enumerated in SW-846 required adaptation or modification in order to efficiently analyze for the target analytes found in the used oil matrix (56 FR 48008).

On May 20, 1992, U.S. EPA published a final rule in the Federal Register, announcing its final decision not to list used oils destined for disposal as hazardous waste, based on the finding that all used oils do not typically and frequently meet the technical criteria for listing a waste as hazardous waste. U.S. EPA identified RCRA Subtitle C hazardous waste characteristics (including toxicity determined using the TCLP) as part of the existing network of regulations applicable to used oils destined for disposal (57 FR 21528-21529).

On September 10, 1992, U.S. EPA published a final rule in the Federal Register, promulgating the final, no-list decision for used oils that are recycled. This final rule incorporated a "presumption of recycling," exempting "used oil" (not mixed with hazardous waste) from a hazardous waste determination so long as the used oil is destined for recycling. (See RCRA Online document, FAXBACK 14054.) The preamble to the final rule did not focus on analytical test methods, including one statement in the context of the rebuttable presumption: "EPA is

recommending the use of SW-846 method 8010 in rebutting the presumption of mixture" (57 FR 41579). The final regulations, however, state more generally, "Persons may rebut this presumption by demonstrating that the used oil does not contain hazardous waste (for example, by using an analytical method from SW-846, Edition III, to show that the used oil does not contain significant concentrations of halogenated hazardous constituents listed in Appendix VIII of part 261 of this chapter)" (e.g., 40 CFR 279.10(b)(1)(ii), at 57 FR 41614).

On June 30, 1993, Science Applications International Corporation, under contract to U.S. EPA, prepared a draft document titled, "Lead in Used Oil Issues Paper: Summary of Six Issues." In a section titled, "Sources of Lead in Storage," SAIC wrote that used oil is mixed with transmission fluid and antifreeze in storage. Transmission fluid sampled contained elevated levels of lead; antifreeze may be a contributing factor in the dissolution of particulate lead. SAIC addresses test methods in the context of a three-fold difference (presumably comparing lead concentrations in automotive crankcase oil-unleaded gasoline engines to lead concentrations in automotive oils/fluids-storage tank samples in the Supplemental Notice of Proposed Rulemaking dated September 23, 1991; see Table III.C.3A. on page 56 FR 48009). With respect to test methods, SAIC writes, "The method used for sample analysis (SW-846 Method 6010) detects all forms of lead in a sample. In addition, the sample preparation procedure utilized in the study [published in 1991] probably did not allow all of the lead (especially particulate lead) to be dissolved and subsequently detected" (pages 2 - 3).

Through final rule in the August 31, 1993 Federal Register, EPA amended its hazardous waste regulations under subtitle C of RCRA of 1976, as amended, by substituting the Third Edition for the Second Edition, including Updated I and II, of "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846. The authority cited for the rulemaking includes Section 3014 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976 (commonly known as RCRA), as amended. Section 3014 includes provisions of the Used Oil Recycling Act of 1980. The preamble to the final rule identifies regulations requiring use of SW-846 methods. Used oil regulations codified at 40 CFR 279 are not identified, so SW-846 functions as a guidance document. (See 58 FR 46040 - 46041.)

A proposed rule in the August 31, 1993 Federal Register identifies certain testing methods used in complying with the requirements of Subtitle C of the Resource Conservation and Recovery Act (RCRA). The new and revised methods, designated as Update II, are proposed to be added to the Third Edition of "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846. The authority cited includes Section 3014 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976 (commonly known as RCRA), as amended. Section 3014 includes provisions of the Used Oil Recycling Act of 1980. SW-846 functions as a guidance document setting forth acceptable, although not required, methods to be implemented by the user, as appropriate, in responding to RCRA-related sampling and analysis requirements. (See 58 FR 46052.) With respect to total halogens (e.g., chlorine), EPA proposed a new method to replace ASTM D808, Method 5050 Bomb Combustion for Solid Waste, proposed a new Microwave Assisted Acid Digestion of Sediments, Sludges, Soils, and Oils (Method 3051), proposed 9253, revised 9252, and proposed 3 new test

methods for total chlorine in new and used petroleum products (9075, 9076, and 9077). SW-846 continues to evolve, with a November 2000 status table identifying SW-846, Third Edition final updates I, II, IIA, IIB, III, IIIA and draft updates IVA and IVB.

bcc: Author's file (w/o attachments)  
 PPPIS Section Reading File (w/o attachments)  
 Branch Reading File  
 Jeff Gahris, AE-17J (w/o attachments)  
 Karl Karg, C-14J (w/o attachments)

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**WASTE MANAGEMENT BRANCH**

SECRETARY	SECRETARY	SECRETARY	SECRETARY	SECRETARY	SECRETARY
TYPIST/ AUTHOR	IL/IN/MI SECTION CHIEF	MN/OH/WI SECTION CHIEF	POL.PREV.& SPEC.INTIV SEC. CHIEF	WMB BRANCH CHIEF	WPTD DIVISION DIRECTOR

1. The information submitted as generator waste characterization included a number of analyses (date sampled and Cl in ppm follow) conducted by Tom King of SRS: 07/14/00, 1878 ppm; 04/01/00, 920 ppm; 3/10/00, 1163 ppm; 2/11/00, 1062 ppm; 2/4/00, 640 ppm; 2/3/00, 728 ppm.